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I HEREBY CERTIFY that annexed hereto is a true copy of documents filed in connection with the following patent application:

Application No.	S2003/0938
Date of Filing	12 December 2003
Applicant	DAVID BROWN an Irish citizen of Isolda Road, Dublin 4, Ireland and FRANCIS O'HERLIHY, an Irish citizen of Holmen Kollen, Station Road, Lusk, County Dublin Ireland.

Dated this 22 day of December 2004.

An officer authorised by the
Controller of Patents, Designs and Trademarks.

FORM NO. 1

S0300939

REQUEST FOR THE GRANT OF A PATENT
PATENTS ACT, 1992

The Applicant named herein hereby request

☐ the grant of a patent under Part II of the Act

☒ the grant of a short-term patent under Part III of the Act

on the basis of the information furnished hereunder.

1. **APPLICANT(S)**

Name(s) and Address(s)

1) **BROWNE, DAVID**
12 Isolda Road
Dublin 4
Ireland

2) **O'HERLIHY, FRANCIS**
Holmen Kollen,
StationRoad, Lusk,
Co. Dublin
Ireland

DescriptionNationality: 1) An Irish Citizen 2) An Irish Citizen

2. **TITLE OF INVENTION**

"A Microphone Mount"

3. **DECLARATION OF PRIORITY ON BASIS OF PREVIOUSLY FILED APPLICATION FOR SAME INVENTION (SECTIONS 25 & 26)**

Previous filing date	Country in or for which filed	Filing No.
NONE		

4. **IDENTIFICATION OF INVENTOR(S)**
Name(s)/Address(es) and Nationality of person(s) believed by Applicant(s) to be the inventor(s)

BROWNE, DAVID
12 Isolda Road
Dublin 4
Ireland

5. **STATEMENT OF RIGHT TO BE GRANTED A PATENT (SECTION 17(2)(B))**

By virtue of a deed of assignment dated September 26, 2003

6. **ITEMS ACCOMPANYING THIS REQUEST - TICK AS APPROPRIATE**

(i)	☒	prescribed filing fee (€60.00)
(ii)	☐	specification containing a description and claims
	☒	specification containing a description only
	☒	Drawings referred to in description or claims
(iii)	☐	An abstract
(iv)	☐	Copy of previous application(s) whose priority is claimed
(v)	☐	Translation of previous application whose priority is claimed
(vi)	☒	Authorisation of Agent (this may be given at 8 below if this Request is signed by the Applicant(s))

7. **DIVISIONAL APPLICATION**

The following information is applicable to the present application which is made under Section 24 -

Earlier Application No:
Filing Date:

8. **AGENT**

The following is authorised to act as agent in all proceedings connected with the obtaining of a Patent to which this request relates and in relation to any patent granted -

Name
F. R. KELLY & CO.

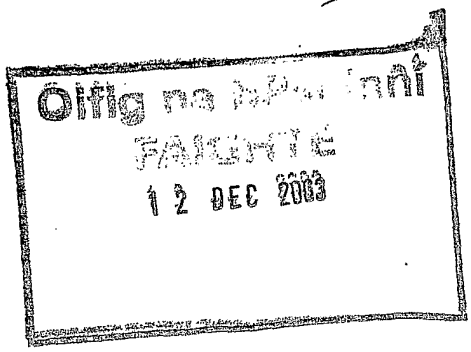
Address
at their address as recorded for the time being in the Register of Patent Agents

9. **ADDRESS FOR SERVICE (IF DIFFERENT FROM THAT AT 8)**

David Browne and Francis O'Herlihy
F. R. KELLY & CO.

By: _____
EXECUTIVE

Date: December 12, 2003



A MICROPHONE MOUNT

The present invention relates to a microphone mount, and in particular a microphone mount whose design results in a reduction in the transmittal of externally originating vibrations to a microphone supported in the mount.

Conventionally microphone mounts or stands are divided into two distinct categories, and although the designs of particular mounts within both categories varies widely, the underlying function does not change. The first category, and the most common type of mount, is the collar or sleeve type mount, in which the microphone is held rigidly within a sleeve or collar connected directly to a boom or similar stand. The internal surface of the collar corresponds roughly in shape and dimension to the body portion of the microphone, such as to form a snug fit therewith. This type of mount is predominantly formed with a split sleeve having a slight taper, in order to effect a taper lock with the microphone, the split sleeve allowing the mount to be used with microphones of slightly different size. The sleeve type mount is generally considered to provide reasonable sound quality, but with certain applications, does not adequately isolate the microphone from external vibrations, and is therefore confined to use in applications requiring low to medium sound quality.

For applications such as studio use or the like, it is vital to reduce to a minimum the structural and/or ground borne external vibrations transmitted to the microphone, which external vibrations are concentrated in the ultra low infrasonic frequency range. Such vibrations may result from, for example, traffic, heavy machinery, seismic energy, or indeed electrical equipment present in the studio or site in question. Thus the second category of microphone mount, which is intended to isolate a microphone mounted therein from such vibrations, is commonly known as a shock mount. Shock mounts come in many different forms, but will usually comprise some form of outer frame, and a floating inner collar or grommet into which the microphone sits, the collar being secured to the outer frame by a number of elastic cords or bands. Thus the cords act as a damping medium between the outer frame, which in use is secured to a boom or the like, and the inner collar, in which the microphone is held. While a shock mount substantially reduces the disturbance to the microphone from external vibrations, it has been found that for most studio type applications, such mounts do not sufficiently reduce the transmission of the above mentioned infrasonic vibrations.

It is therefore an object of the present invention to provide an improved microphone mount which all but eliminates the transmission of infrasonic vibrations to a microphone held within the mount.

According to a first aspect of the present invention, there is provided a mount for a microphone, the mount being adapted to apply pressure to a least two points on the circumference of the microphone such as to clamp the microphone in place.

Preferably, the mount applies pressure to at least three points on the circumference of the microphone.

Preferably, the at least three points are substantially equally spaced about the circumference of the microphone.

Preferably, the mount applies pressure to a first set of three points which lie substantially in a first plane, and to a second set of three points which lie substantially in a second plane, the second plane being in parallel spaced relation to the first plane.

Preferably, the mount comprises a frame having at least three rigid members adapted to be engaged against the microphone about the circumference thereof, such as to apply pressure to three points on the circumference of the microphone.

Preferably, the three rigid members are arranged relative to one other such as to engage the microphone at points which are substantially equally spaced about the circumference of the microphone.

Preferably, the frame has a first set of three rigid members which lie substantially in a first plane, and a second set of three rigid members which lie substantially in a second plane, the second plane being in parallel spaced relation to the first plane.

Preferably, the frame comprises a pair of supports in parallel spaced relation to one another, one support carrying the first set of rigid members and the other support carrying the second set of rigid members.

Preferably, the pair of supports are connected together by a rigid cross member.

Preferably, each support is an annular ring.

Preferably, each of the rigid members comprises a threaded bolt which is threaded through the respective annular ring, in a generally radial direction.

Preferably, the pair of annular rings and the cross member, in combination, are substantially U-shaped in profile.

Preferably, each of the rigid members is provided with a foot at the microphone contacting end thereof.

Preferably, each foot is mounted to the respective rigid member by a ball and socket joint.

According to a second aspect of the present invention, there is provided a method of clamping a microphone such as to reduce the transmission of vibrations thereto, the method comprising clamping the microphone between at least two points on the circumference of the microphone.

Preferably, the method comprises clamping the microphone between at least three points on the circumference of the microphone.

Preferably, the method comprises clamping the microphone between a first set of three points which lie substantially in a first plane, and a second set of three points which lie substantially in a second plane, the second plane being in parallel spaced relation to the first plane.

The present invention will now be described with reference to the accompanying drawings, in which:

Figure 1 illustrates a perspective view of a mount for a microphone according to the present invention;

Figure 2 illustrates a front elevation of the mount of Figure 1;

Figure 3 illustrates a perspective view of the mount of the present invention, in which a microphone is clamped; and

Figure 4 illustrates a perspective view of an alternative embodiment of the mount illustrated in Figures 1 to 3.

Referring now to Figures 1 to 3 of the accompanying drawings, there is illustrated a mount, generally indicated as 10, for holding a microphone 34 such as to substantially reduce or eliminate the transmission of infrasonic vibrations to the microphone 34. The mount 10 comprises a frame 12 in which to secure the microphone 34, which microphone 34 comprises a body 36 and a head 38. The frame 12 is mountable, in use, to any conventional microphone stand or boom 32, and in the preferred embodiment illustrated, by means of an internally threaded collar 30. For practical purposes, the frame 12 is connected, via a neck 24, to an elbow joint 26, which is operable by means of a pair of levers 28. The elbow joint includes a washer, preferably of plastic or the like, disposed between the two sides thereof, in order to reduce friction. Thus, the inclination of the frame 12 relative to the boom 32 may be varied to suit particular applications.

The frame 12 comprises a pair of supports in the form of annular rings 14, in parallel space relation to one another, and secured together, in the preferred embodiment illustrated, by a cross member 16. It will however be appreciated from the following description of the invention that the frame 12 could be varied widely in size and/or shape, once the desired functionality is embodied thereby, as will be described

in detail hereinafter. In the preferred embodiment illustrated, the entire frame 12 is preferably formed from a rigid material such as a metal or the like, for example stainless steel or aluminium.

Each annular ring 14 carries three rigid members in the form of threaded bolts 18, each of which is threaded through the respective annular ring 14, preferably in a generally radial direction. Thus each bolt 18 can be advanced towards, or drawn away from, the centre of the respective annular ring 14, which movement can be effected by means of a dial 20 formed at the outer end of each bolt 18. Thus in order to secure the microphone 34 within the mount 10, each bolt 18 is threaded outwardly a distance sufficient to allow the body 36 of the microphone 34 to be passed through, and be circumscribed by, the pair of annular rings 14. At this point, each bolt 18 is then advanced towards the body 36, such that a tip 22 of each bolt 18 engages the body 36, thereby clamping the microphone 34 within the mount 10. It has surprisingly been found that clamping the microphone 34 in this way results in a substantial reduction in the transmittal of infrasonic vibrations to the microphone 34 from structural and/or ground borne sources.

Following this surprising discovery, it has been found, through experimentation, that by clamping the microphone 34 at only two points, a reduction in the transmittal of vibrations to the microphone 34 is experienced, although it will be appreciated that such

a configuration is extremely unstable, as the microphone 34 is easily disturbed or dislodged. Similarly, the application of pressure to three points about the circumference of the microphone 34 again produces a substantial reduction in the transmittal of vibrations thereto, but is again relatively unstable for practical purposes, and has a tendency to become disturbed or dislodged, in particular if an attempt is made to move the microphone 34. Thus, in practice, it has been found that the most practical and preferred arrangement is that of the mount 10 illustrated, which applies point pressure at a first set of three points, lying substantially in a first plane, and a second set of three points lying substantially in a second plane in parallel spaced relation to the first plane. Thus it will be understood that the essence of the invention is in clamping the microphone 34 by the application of point pressure, and is therefore not intended to be limited to the particular embodiment illustrated, in which pressure is applied to the microphone 34 at six points.

Referring now to Figure 4 of the accompanying drawings, there is illustrated an alternative embodiment of a mount according to the present invention, generally indicated as 110, again for holding a microphone (not shown in Figure 4) such as to substantially reduce or eliminate the transmission of infrasonic vibrations thereto. In this alternative embodiment, like components have been accorded like reference numerals, and unless otherwise stated, perform a like function.

The single difference between the mount 110 and the mount 10 is the provision of a foot 40 at the free end of each of a plurality of bolts 118. These feet 40 prevent damage to the casing of any microphone clamped within the mount 110. In order to enable each foot 40 to closely follow the contour of the microphone, so as to effectively grip same, each foot 40 is mounted to the respective bolt 118 by means of a ball and socket joint 42. It will of course be appreciated that any other suitable form of foot 40 could be used, and need not be provided with the ball and socket joint 42.

It will consequently be appreciated that the frame 12;112 could be reconfigured to any other suitable shape which permits the six bolts 18;118 to be carried in the particular orientation illustrated. It will furthermore be appreciated that the threaded bolts 18;118 could be replaced by any other suitable equivalent, which is capable of applying a point load to the body 36 of the microphone 34 (not shown in Figure 4). For example, a spring loaded rod (not shown), or some form of cam arrangement (not shown) could be substituted for each of the bolts 18;118.

It will be appreciated that the operation of the mount 10;110 is in direct opposition to the teachings of prior art shock mounts, from which it is clear that some form of elastic or resiliently deformable coupling must be provided between the microphone 34 and associated stand (now shown), in order to dampen any

vibrations. However, the mount 10;110 of the present invention rigidly clamps the microphone 34 by means of the frame 12;112 and plurality of bolts 18;118. Despite this rigid coupling, the mount 10;110 of the present invention has been found to significantly reduce, or eliminate, the transmission of infrasonic vibrations from external sources to the microphone 34.

The present invention is not limited to the embodiment described herein, which may be amended or modified without departing from the scope of the present invention.

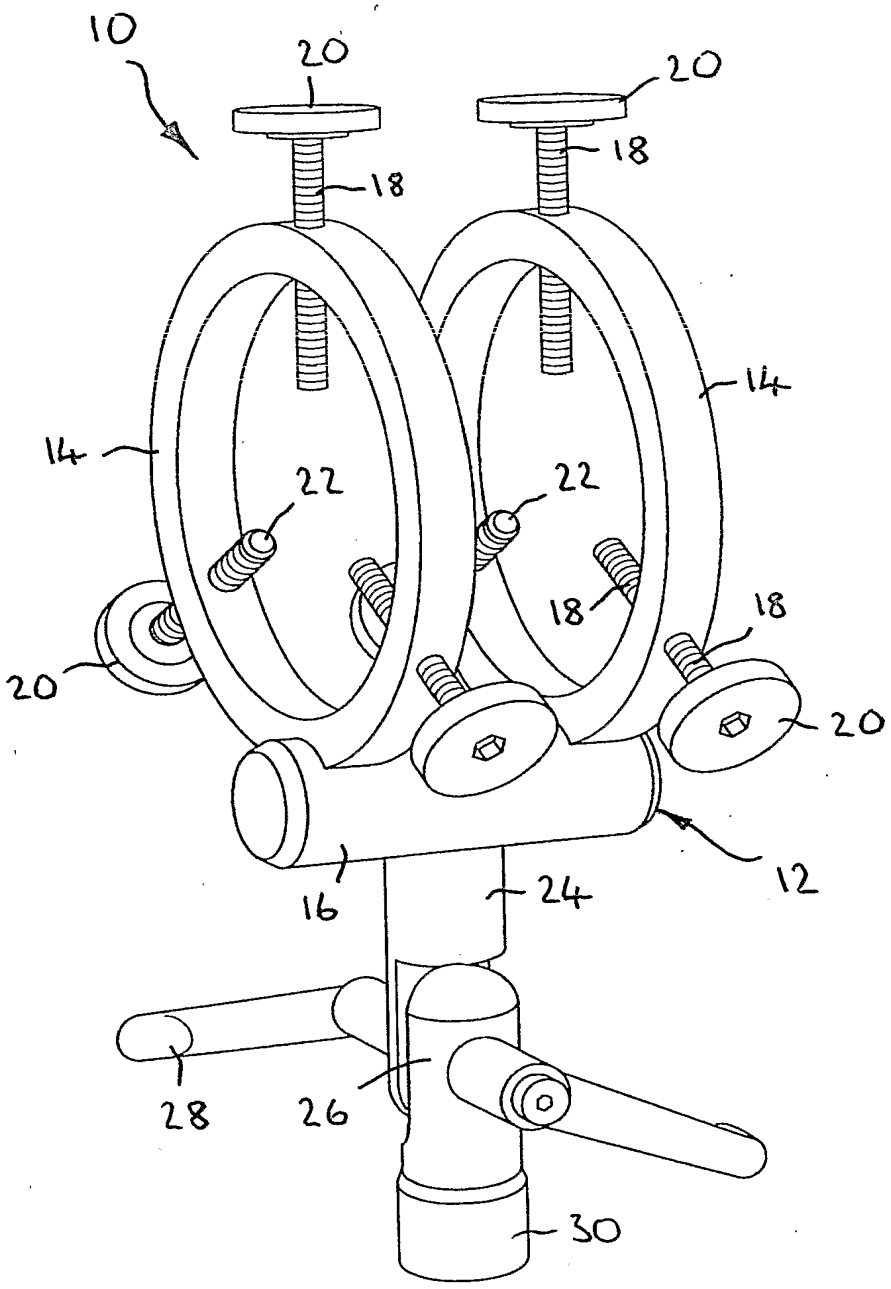


FIG. 1

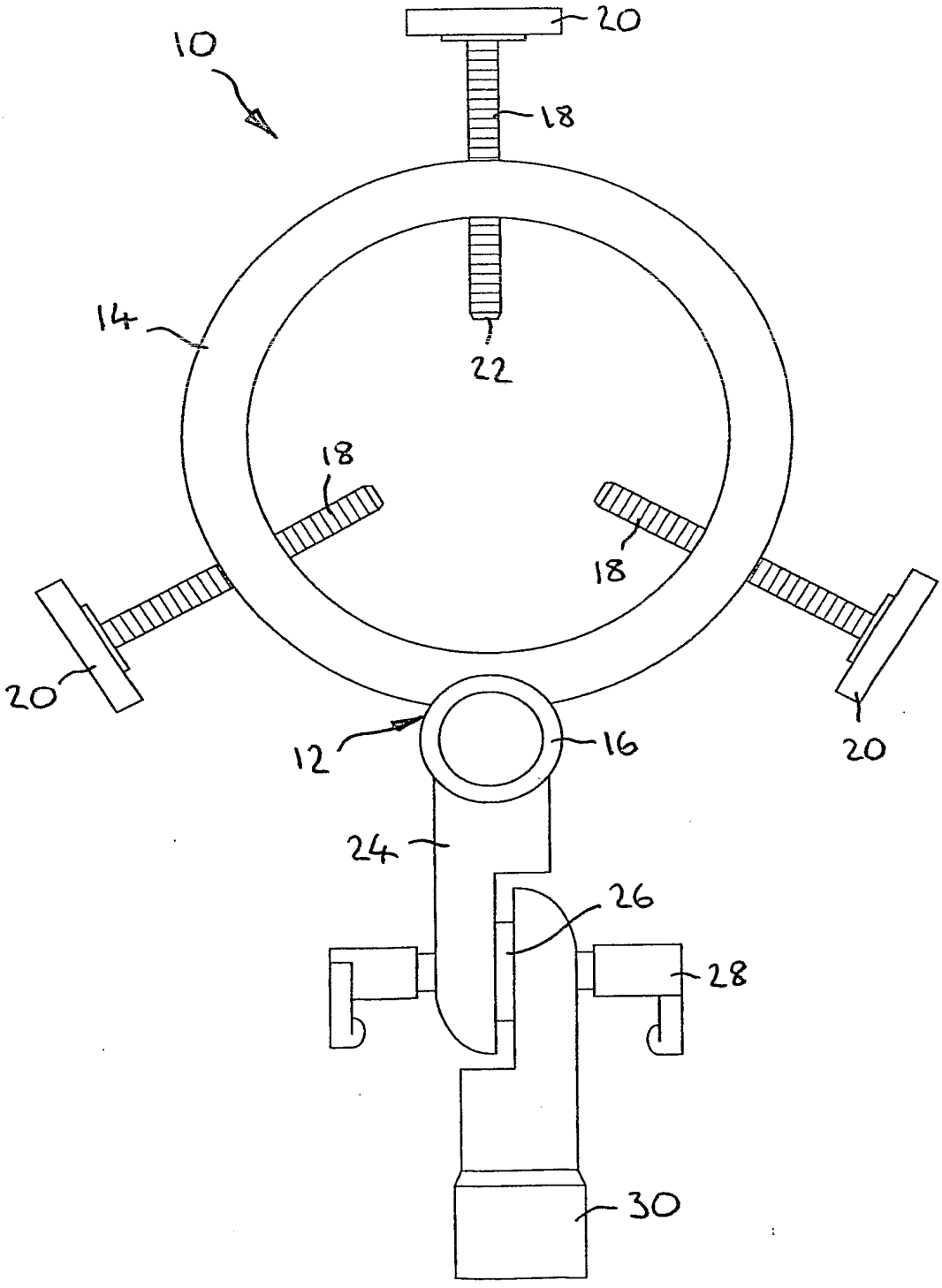


FIG. 2

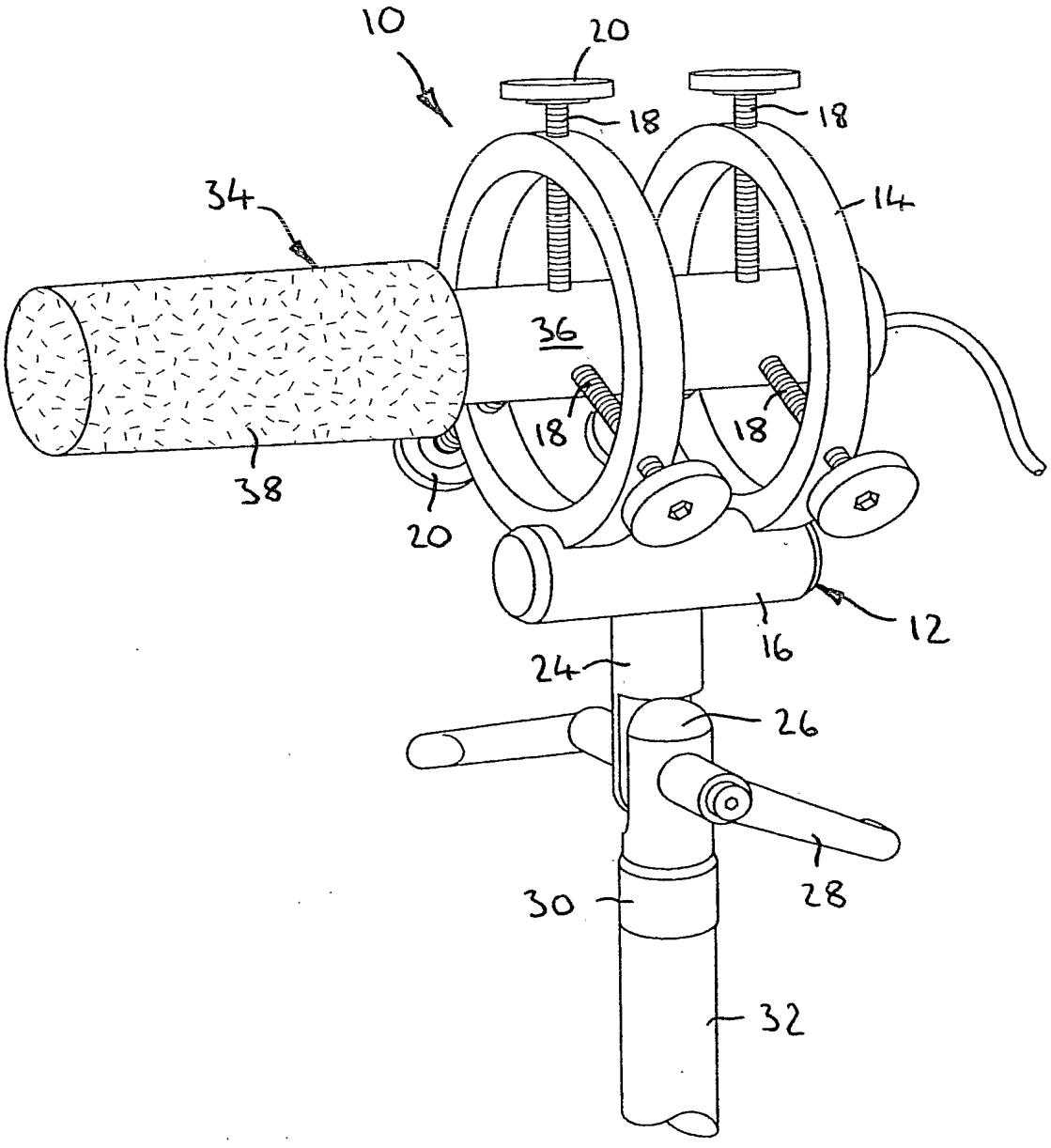
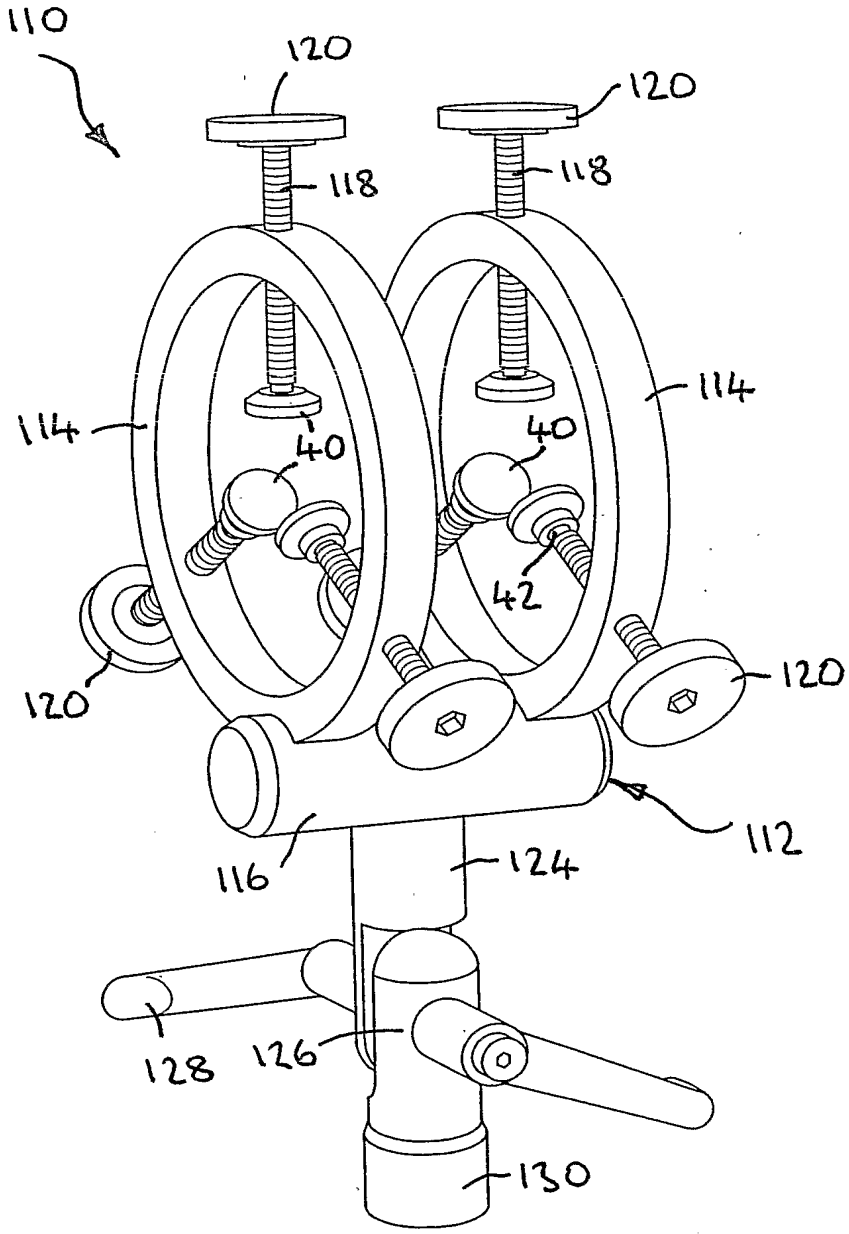


FIG. 3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